

Abstract Submitted
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Townsend Discharge in Methane at Very High E/N¹ ZELJKA NIKITOVIC, Assistant Research Professor, ALEKSANDRA STRINIC, Assistant Research Professor, VLADIMIR STOJANOVIC, OLIVERA SASIC, GORDANA MALOVIC, ZORAN PETROVIC, Research Professor, INSTITUTE OF PHYSICS TEAM — We show preliminary comparisons between experimental data and Monte Carlo simulations for the spatial profiles of excitation coefficients for the molecular band CH ($A_2 - X_2$) produced in dissociative excitation by electron swarms and fast neutrals in methane. Measurements were made in parallel plate drift tube for E/N values between 500 Td and 11000 Td (E- electric field, N- gas density, 1 Td = 10⁻²¹ Vm²). The spatial profiles of emission reveal significant heavy particle excitation even at moderately high E/N. Calculated absolute profiles are in excellent agreement with the experimental results. The calculations were based on the heavy particle cross sections of Petrović and Phelps [1].

[1] Z.Lj.Petrović A.V.Phelps (1992) unpublished.

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